CONTINUING ELIGIBILITY INSPECTION (CEI) REPORT

FOR FLOOD CONTROL PROJECTS

1. Project Name: KK Dam Flood Control Project

2. Date of Inspection: January 14, 2003

   Skies were overcast, there were recent heavy rains and the tide was moderate during the downstream inspection.

3. Inspection Personnel:

	Name	Agency/Office	Telephone No.
a.	Eric Li	CEPOH-EC-T	438-8862
b.	Nani Shimabuku	CEPOH-EC-T	438-2940
c.	Rick Oleniacz	CEPOH-EM	438-1981
d.	Hugh Liu	DFM/Road Main Div.	527-5337
e.	Gary Ikeda	DFM/Road Main Div.	247-3553
Guest:			
f.	Edwin Matasuda	DLNR Planning	587-0227
g.	Jonel Smith	Ho'omaluhia DP&R	233-7325

4. Discussion:

In general, the maintenance of the project is very good. Several discrepancies were noted and brought to the attention of the C&C representatives during the inspection. The major deficiencies were as follows: (® denotes a repeat item from last inspection of October 12, 2000.)

4.1 Table of Maintenance Defects

Table. Summary of Defects Requiring Maintenance

Location	Station	Key Comments and/or Defects
Dam - Access Road to Intake Tower		Do not remove trees adjacent access road to intake tower and reservoir.
Dam - Intake Tower/Reservoir (sluice gate stem and crank)		Maintenance is having a difficult time with opening/closing sluice gate even after key mechanical joints have been oiled. Problem unknown. Elodea Densa vegetation infestation in reservoir may be part of the sluice gate problem since debris and elodea densa become sandwiched between the sluice gate and frame. One suggestion would be to drain the reservoir to clear all the elodea and then to check on the sluice gate and crank to find the exact problem.
Dam - Intake Tower (sluice gate)		Monitor leak at sluice gate bottom right hand corner.
Dam - Intake Tower (joint)	2+38	Monitor patched joint #12.
Dam - Intake Tower (joint)	2+78	Monitor hairline crack for leaking in the future.
Dam - Intake Tower (joint)	2+98	Slow dripping crack needs to be patched.
Dam - Intake Tower (joint)	3+18	Monitor invert dip causing 0.5” deep ponding water. Dip is probably caused from settling due to the weight of the dam above.
Dam - Spillway (testing of weep holes)	(-)1+00 to 10+00	For the next annual inspection, use water tank to test ground weep holes for proper drainage of French drains under spillway invert.
Dam - Spillway (left wall)	(-)1+15	Located upstream of Ogee weir. Monitor cracking at left wall below drain pipe.
Dam - Spillway (left wall)	(-)1+30	Remove vegetation from joint.
Dam - Spillway (right wall)	(-)1+30	Monitor cracking above and below drain pipe.
Dam - Spillway (right wall)	(-)0+70	Monitor seepage through crack in wall. Currently seepage in structure is causing rusting in the rebar.
Dam - Spillway (right wall)	(-)0+60	Monitor seepage in cracked area.
Dam - Spillway (left wall)	3+00 and 4+00	Remove trees, roots, and branches adjacent to wall.
Dam - Crest	6+00, 7+50, 13+25	Fill depressions/holes with basecourse. Holes caused by maintenance vehicles.
Dam - Townside Toe	20+00	Paint weathered paint portion of Piezometer tube #21.
Dam - Townside Toe	20+00	Remove debris from culvert.
Stream Mouth, LB	3+00	Add more and larger rip rap to eroded area.
Stream Mouth, LB	6+00	Remove concrete step encroachment.
Stream Mouth, LB	6+25	Remove concrete step encroachment and add

		larger and more rip rap to eroded area.
Stream Mouth, LB	12+00	Remove debris (not rip rap) and add rip rap to eroded areas (typical left bank)
Park - culvert		4th culvert from the entrance. Remove debris surrounding the outlet.
Park - Wild Life Pond		Spillway outlet at pond area is eroding. Need to re-grade this area as necessary.
Park - Wild Life Pond		Difficult to maneuver shear gate - check on gate.
Park - Day Use Restroom		Same comment as last year. Termites have heavily damaged beams and structure. Structure needs to be replaced. Parks currently working on this.
Park - Equestrian Parking Lot		Same comment as last year. Parking lot needs to be repaved. Parks currently working on this.
Park - Kahua Kukui Comfort Station		The wahine restroom is missing a cold water handle for one of its showers. Replace missing handle.

4.2 DAM:

4.2.a. Intake Structure:

4.2.a.1. Overview pictures to intake tower:

Overview of intake tower maintenance road. Do not remove trees on right side of picture adjacent dam and reservoir. A study was done by the Corps, which documented that the trees would not undermine the integrity of the dam.

Panoramic view of intake tower and island.

View of intake tower and island.

Close-up view of intake tower showing water level at 160 elev.

4.2.a.2. Entrance to intake tower shaft and sluice gate:

View of stem and crank shaft to sluice gate. Maintenance personnel said the crank to open and close the sluice gate has become more difficult in recent years even after mechanical connections were oiled down. They aren't sure what the problem is. Elodea Densa might be part of the problem as the reservoir has been plagued by the infestation of this sea plant used in aquariums; Elodea Densa and other debris might be sandwiched between the sluice gate and frame.

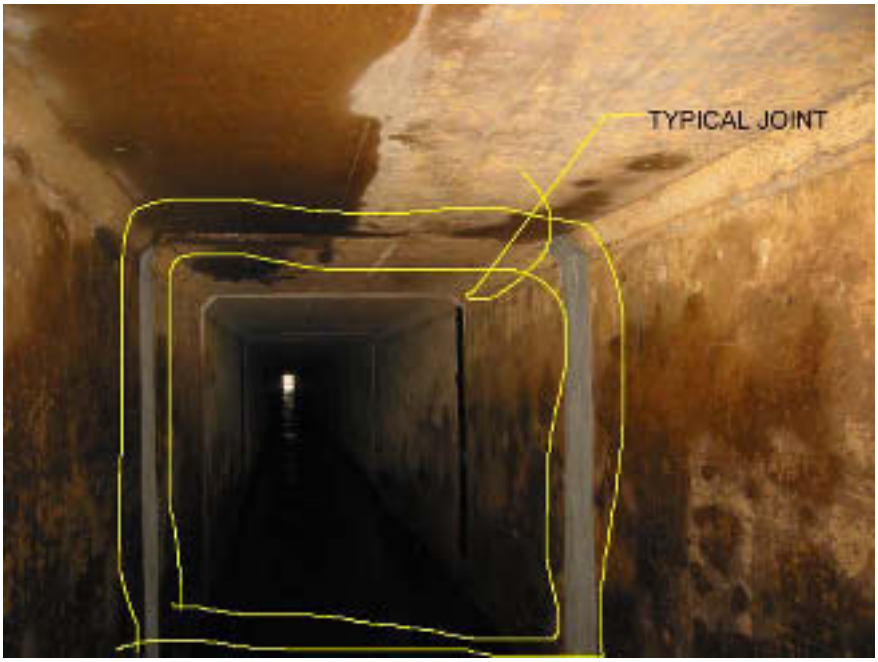
Entrance shaft to intake tower.

View of entrance and ladder down intake tower shaft.

Continue to monitor leak in sluice gate at bottom of intake tower entrance shaft. Elodea Densa observed hanging on ladder rungs.

Continue to monitor leak at sluice gate bottom corner.

4.2.a.3. Intake tower concrete conduit:



All 27 joints showed some form of concrete patching (typical).

No deficiencies Noted= (NDN):
Joint #1 - Sta. 0+18 (NDN)
Joint #2 - Sta. 0+38 (NDN)
Joint #3 - Sta. 0+58 (NDN)
Joint #4 - Sta. 0+78 (NDN)
Joint #5 - Sta. 0+98 (NDN)
Joint #6 - Sta. 1+18 (NDN)
Joint #7 - Sta. 1+38 (NDN)
Joint #8 - Sta. 1+58 (NDN)
Joint #9 - Sta. 1+78 (NDN)
Joint #10 - Sta. 1+98 (NDN)
Joint #11 - Sta. 2+18 (NDN)

Joint #12 - Sta. 2+38, monitor patch joint (NDN).

Joint #13 - Sta. 2+58 (NDN)

Joint #14 - Sta. 2+78, Monitor hairline crack for leaking in the future.

Joint #15 - Sta. 2+98, patch crack with slow dripping leak.

Joint #16 - Sta. 3+18, Monitor invert (dip with ponding water)

Joint #17 - Sta. 3+38
Joint #18 - Sta. 3+58
Joint #19 - Sta. 3+78
Joint #20 - Sta. 3+98
Joint #21 - Sta. 4+18
Joint #22 - Sta. 4+38
Joint #23 - Sta. 4+58
Joint #24 - Sta. 4+78
Joint #25 - Sta. 4+98
Joint #26 - Sta. 5+18
Joint #27 - Sta. 5+38 End

4.2.a.4. Intake tower outlet and stilling basin:

View of stilling basin.

View of stilling basin.

View of outlet at intake tower conduit.

Panoramic view of stilling basin at intake tower outlet.

4.2.b. Spillway Structure:

4.2.b.1. Approach Channel:

Panoramic view of approach structure.

Approach channel right bank.

Approach channel to spillway transition.

4.2.b.2. Spillway structure:

View of Ogee weir.

View of Ogee weir and spillway left wall.

Sta. (-)1+15, Right Wall, Monitor cracking below drain.

Sta. (-)1+30, Left Wall, Remove vegetation from joint.

Sta. (-)1+30, Right Wall, Monitor cracking above and below drain.

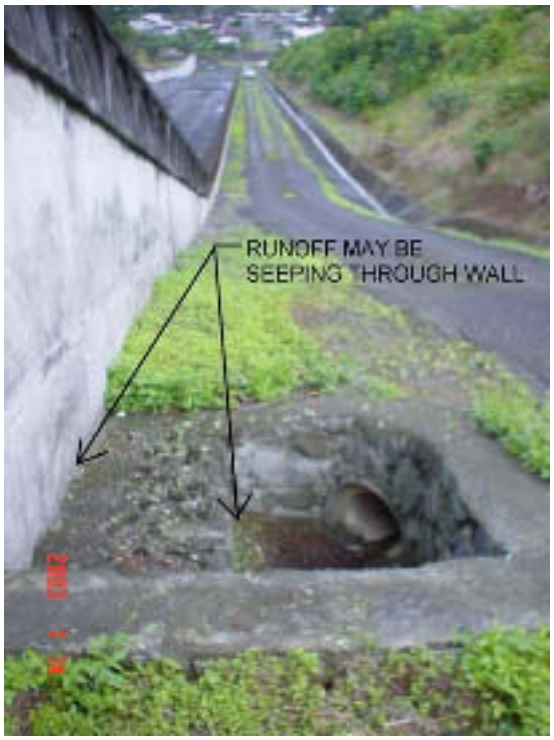
Sta. (-)1+00, Right Wall, view of seepage and cracking through spillway channel.

Sta. (-)0+70, Right Wall, Monitor seepage through wall. Monitor area.

Sta. (-)0+60, Right Wall, Monitor seepage through wall.

Sta. (-)0+60, Right Wall, Close up of cracked void.

Sta. (-)0+70, Right Wall, eroded areas have been patch for slope leading to approach channel. Corrected deficiency from last year.



Sta. (-)0+60, Right Wall, Runoff entering drain area is contributing to seepage through wall. Continue to monitor.

Overview of spillway structure looking upstream and rock swale left of spillway maintenance road.

Sta. 3+00, Left Wall, again continue to remove trees and branches adjacent to structure (typical).

Sta. 4+00, Left Wall, Continue to remove trees adjacent to spillway wall. Trees roots adjacent to wall will damage structure (typical).

Sta. 5+00, Channel Invert, Continue to monitor and cleanout weep holes as required.

Sta. 5+50, Typical weep hole to French drain. Continue to clean out as required.

Sta. 5+75, Typical cleanout and cover for weep hole French drain system.

Sta. 7+75, Overview looking downstream at spillway stilling basin.

Sta. 10+00, Overview of spillway stilling basin.

Overview of spillway outlet.

4.2.c. Dam Embankment:

4.2.c.1. Maintenance road to dam:

Overview of maintenance road entrance to dam (intake tower, dam crest, and approach channel and spillway.

Overview of maintenance road access to crest of dam. Looking at approach basin on the right of the crest of the dam.

4.2.c.2. Dam crest and embankment:

Sta. 6+00, Overview of dam crest, reservoir side - Add basecourse to eroded crest spots due to maintenance vehicular access.

Sta. 7+50, Overview of dam crest, town side - Add basecourse to eroded crest spots due to maintenance vehicular access.

Sta. 11+50, Overview of dam slope, town side. Construction vehicles doing maintenance to remove trees and bushes between dam and spillway.

Sta. 12+00, Overview of French drain structure under rock cover. Electrical recorder box on dam crest has been removed as requested from the previous year.

Sta. 13+00, Overview of French drain structure under rock cover end and intake tower stilling basin headwall.

Sta. 13+25, Crest of dam with town side on left. Add basecourse to eroded spots on dam crest due to maintenance vehicular use.

Sta. 14+00, Crest of dam overview looking at reservoir. Piezometric tubes have been repainted.

Sta. 14+50, Overview of town side slope.

Overview of dam structure looking towards Haleiwa direction.

4.2.c.2. Swale Ditch at Dam Toe:

Sta. 20+50, Overview of town side slope and piezometer tube #21.

Paint chipped off portion of piezometer tube #21 and remove debris from surrounding culvert used for town side interior drainage.

Enlarged photo of missing paint on piezometer tube #21.

Remove vegetation and debris inside of culvert.

Overview of end of townside interior drainage looking at intake tower outlet headwall.

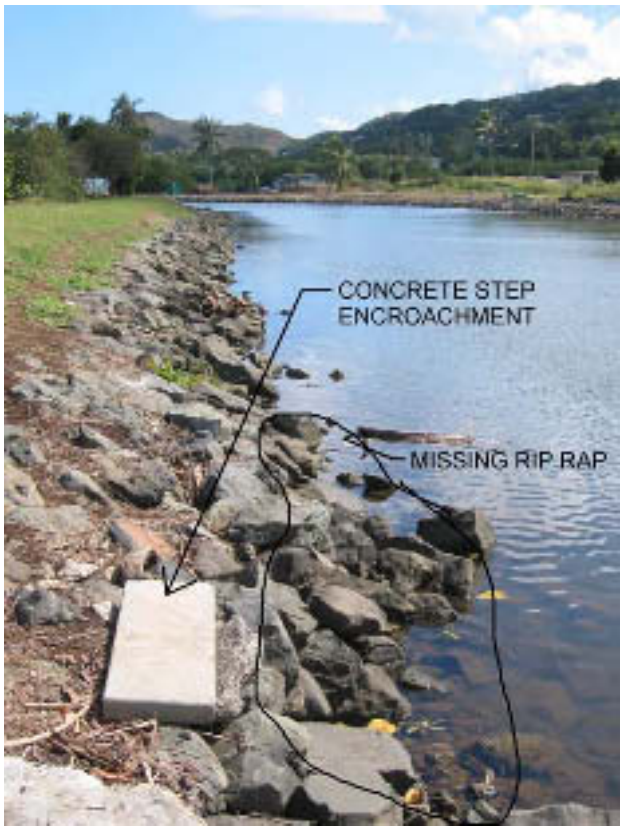
4.2.d. Downstream Channel and Mouth (1274′ of Improvements):

Sta. 0+00, Overview of stream mouth outlet to Kaneohe Bay.

Sta. 3+00, LB, Add larger rip rap to eroded area.

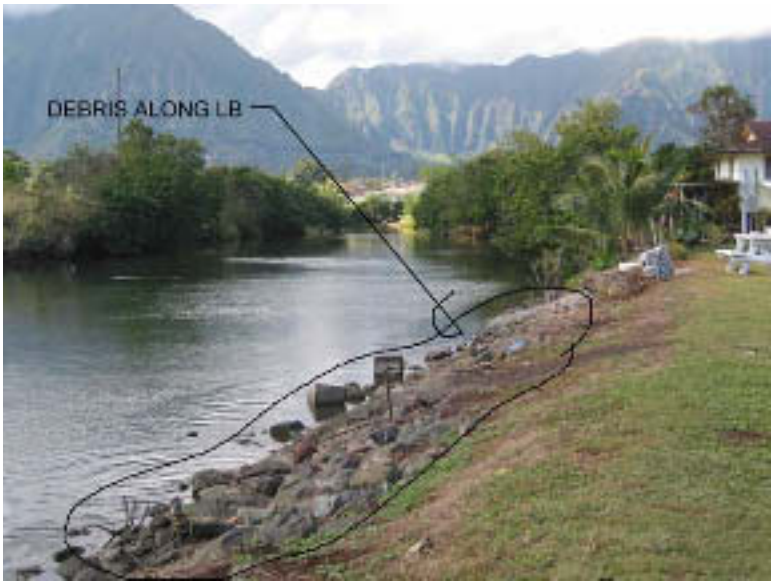
Sta. 5+50, Panoramic view of stream mouth from maintenance gate entrance roadway.

Sta. 6+00, LB, remove concrete step encroachment.



Sta. 6+25, LB, remove concrete step encroachment and add larger rip rap to eroded area.

Sta. 9+00, Overview looking upstream.



Sta. 12+00, LB, remove debris from bank. Do not remove rip rap. Add rip rap to eroded areas - typical along left bank.

Sta. 12+10, Overview of stream. Stream flows from right to left.

4.2.e. Park:

General comment: Only Jonel of Department of Parks and Recreation (DP&R) accompanied the Army Corps for this portion of this inspection. For the next annual inspection both DP&R and a direct representative from the sponsor (DFM Road Maintenance Division) will be required to attend.

4.2.e.1. Culverts:

Overview of first culvert at entrance to park.

Overview of culvert to park entrance clear.

Overview of 4th culvert from park entrance relatively clear. Remove debris around culvert outlet.

Overview of 5th culvert from maintenance entrance clear.

Overview of 6th culvert from entrance clear.

4.2.e.2. Wildlife Pond:

Continue to maintain the Mitigation Levee and spillway.

Monitor eroded spillway outlet area. Re-grade to stabilize bank and outlet as required. Remove circled tree and roots.

Overview of wildlife pond.

Wildlife pond gate doesn't appear to be operational or is difficult to maneuver. Check on gate.

4.2.e.3. Comfort Stations:

Perform structural repairs to "Day Use" restroom. Termites have damaged roof structure, brace & support beams and rafters. Same comment from last year. Work order currently being processed to do this.

General Note: All other comfort stations are in good condition with new roofs and paint jobs. Kahua Nui comfort station is being replaced with a newer comfort station in that area.

4.2.e.4. Roads and Parking Areas:

Repave the Equestrian Area parking lot. Same comment as last year. Area currently under construction for new comfort station.

General Note: All other parking lots have been repaved within the last year and are in good condition. However, the road to the parking lots should be repaved in the future as well.

4.2.e.5. Fencing, Signs:

No deficiencies noted.

4.2.e.6. Grounds, Improved & Semi-improved:

No deficiencies noted.

4.2.e.7. Water Supply, Fire Hydrant, Fixtures:

Replace Kahua Kukui missing cold water handle in the wahine portion of the comfort station.

General Note: No other deficiencies noted.

4.2.e.8. Mechanical Equipment:

No deficiencies noted.

5. Conclusion:

IAW ER 500-1-1, (dated 30 September 2001), and based on this CEI, the Project Condition Code is ACCEPTABLE and the project is considered ACTIVE in the Rehabilitation and Inspection Program. NOTE: Unless there is an increase in maintenance the project will be rated Minimally Acceptable within the year.

Signed: _____
Eric Li, CEPOH-EC-T

Signed: _____
James Pennaz, P.E., Ch, CEPOH-EC-T

Enclosure (s)
1. Site Plan